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Model Modules to Assist Assessing and Controlling Stress Corrosion Cracking #126
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We introduced a simple algorithm to the mechanism for NNSCC. We also have initiated experiments designed to establish the optimum condition for cracking kinetics via beaker studies and quantification of hydrogen permeation under unload conditions. Work will continue on experimental testing over the next several monthly reporting periods combined with theoretical validation of proposed models.

Electrochemical kinetics and transport phenomena approach is converted in a simple algorithm based on the species presented in the solution, and prior steady state experimental results helped to correlate theoretical algorithm with laboratory results for the species presented in the electrolyte. Kinetic parameters of the system such as the current are driven by the ionic species and monitored by electrochemical techniques.

Work thus far has focused on improving the mechanism for near-neutral SCC (NNSCC), by evaluating methodologies and practices to characterize the hydrogen effect that exists within a metallic structure that results from hydrogen diffusion and accumulation within the metallic structure. Furthermore, laboratory experiments that are underway will result in data for further validation of the theoretical approach. From experimental results, experimental cell design for load conditions was initiated.